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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,404	02/06/2006	Masahiko Igarashi	025416-00025	2541

4372 7590 06/25/2009  
ARENT FOX LLP  
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WASHINGTON, DC 20036

EXAMINER
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GARCIA, ERNESTO

ART UNIT	PAPER NUMBER
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3679

NOTIFICATION DATE	DELIVERY MODE
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06/25/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
IPMatters@arentfox.com  
Patent\_Mail@arentfox.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,404	<b>Applicant(s)</b> IGARASHI ET AL.	
	<b>Examiner</b> ERNESTO GARCIA	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2009 and 14 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 14, 2009 has been entered.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Drawings***

The drawings were received on April 14, 2009. These drawings are accepted.

### ***Claim Objections***

Claim 11 is objected to because of the following informalities:

regarding claim 11, “of” in line 1 should be --comprising-- as the shaft and the hub are part of the mechanism claimed, and --further-- should be inserted before “comprising” in line 3 as the mechanism further includes the shaft tooth section and everything that follows line 4. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have been made.

### ***Specification***

The substitute specification filed April 14, 2009 has been entered because it does conform to 37 CFR 1.125(b) and (c).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ichikawa et al., 7,052,402.

Regarding claim 11, Ichikawa et al. disclose, in Figure 11, a mechanism comprising a shaft **100** and a hub **200**. The shaft **100** has a shaft tooth section **204**. The hub **200** has a hub tooth section **104** in engagement with the shaft tooth section **204**. The shaft tooth section **204** has a straight peak **A1** (see marked-up attachment) having a constant tooth thickness and a valley (the cavity between two teeth) having an outside diameter varying from an end of the shaft **100** toward a shaft shank **103** of the shaft **100**. The valley has a step region **A2** sloped toward the hub tooth section **104** obliquely at a predetermined angle. The valley has a step region **A2** radius of the shaft tooth section represents a distance from a central axis of the shaft **100** to a bottom land **A4** of the valley is constant from the step region **A2** to the end of the shaft **100**. The hub tooth section **104** has a straight peak **A3** opposing and engaging the valley (the cavity) of the shaft tooth section **204**. The peak **A3** of the hub tooth section **104** has a constant tooth thickness and a valley (the cavity between the teeth of the hub). The peak **A3** of the hub tooth section **104** and the valley (the cavity) of the hub tooth section **104** have a constant inside diameter from the end of the shaft **100** toward the shaft shank 103 in an axial direction of the shaft.

Regarding claim 12, Ichikawa et al. disclose a mechanism wherein the step region **A3** has a tilt angle set to a value ranging from 5 degrees to 45 degrees.

### ***Response to Arguments***

Applicant's arguments with respect to claims 11 and 12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stall et al., 5,779,551, show a step region 7, which can be integrated to straight teeth of a shaft engaging with straight teeth of a hub as commonly known. The Japanese patent, JP-9-042303A, teaches the step region as discussed in the prior art of Ichikawa et al., 7,052,402.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 571-272-7083. The examiner can normally be reached from 9:30AM-6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached at 571-272-7087.

Art Unit: 3679

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/E. G./

Examiner, Art Unit 3679

/Michael P. Ferguson/  
Primary Examiner, Art Unit 3679

June 23, 2009

Attachment: one marked-up page of Ichikawa et al., 7,052,402

# FIG. 11

PRIOR ART

